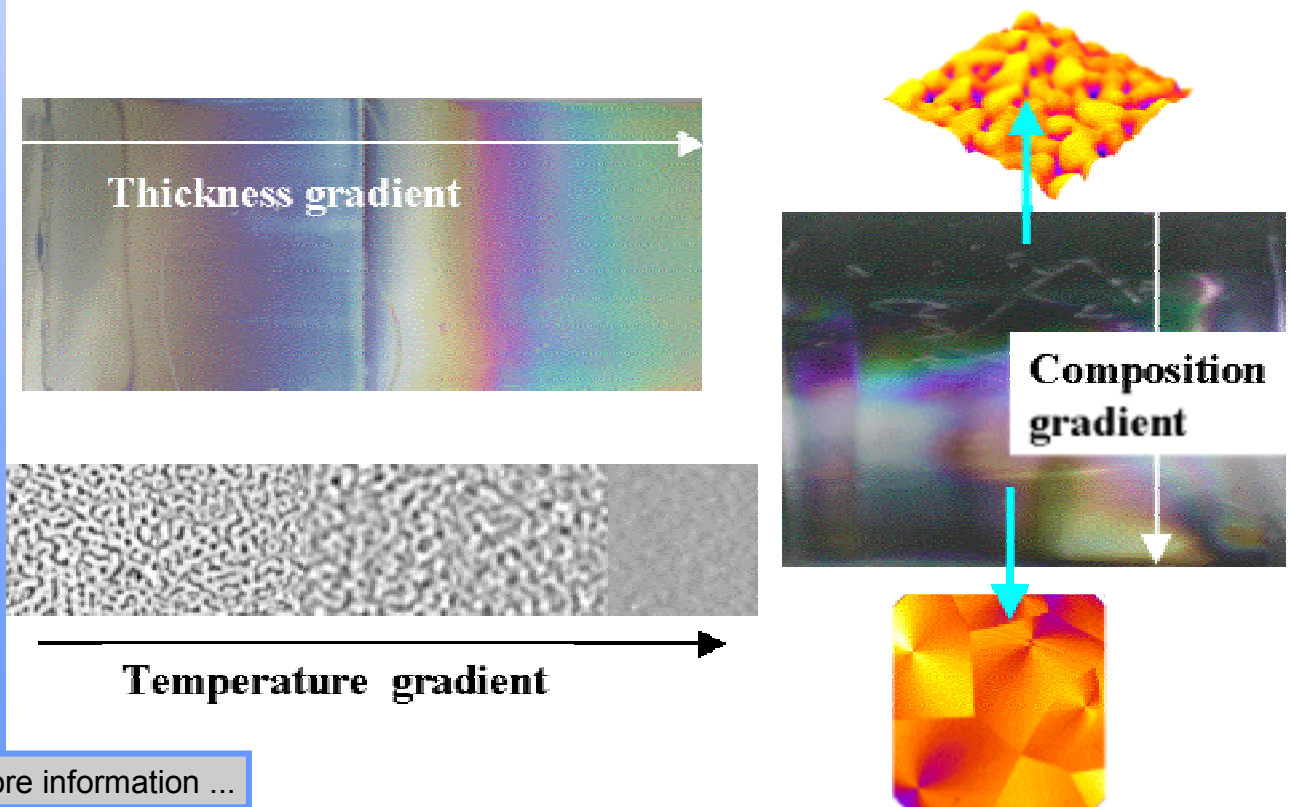


# Semi-crystalline polymers

- Critical issues
  - Controlling the crystallinity and morphology of polymers and polymer blends are important in designing polymeric materials with tailored properties. Mechanisms for controlling crystallinity through nucleating agents and process variables such as degree and rate of undercooling are critical issues.
- Research Strategy
  - The combinatorial preparation of crystalline polymer films involving heated solvent flow coating methodology will be developed and modified for including nucleating agents in controlled amounts. Polarized optical microscopy in conjunction with laser light scattering are expected to be primary analytical tools for the high throughput studies using temperature gradient under-cooling stage in reflection and transmission geometry.
- Research Highlights
  - Model blend system of a crystalline / amorphous PEO / PMMA was combinatorially investigated as a function of undercooling rate, film thickness and composition in films containing gradients in these parameters. These material and process variables were found to strongly influence the crystalline morphology and optical properties across the film.



For more information ...